CLAIMS

What is claimed is:

1. A method for measurement in which a resistance used for current detection is shared by a current measurement device and a voltage source having current limiting function, a value of current output from the voltage source is measured by the current measurement device using the resistance, and a compliance and a current range of the current measurement device are automatically changed in accordance with the measured current value, said method comprising the steps of:

setting the current range and a true compliance to user-specified values;

setting the compliance for the current output from the voltage source to a prescribed value;

measuring the value of current output from the voltage source using the current measurement apparatus;

comparing the measured current with the current range and determining whether or not the current range is optimum;

if the current range is found not to be optimum, changing the current range and performing another measurement of the current output from the voltage source with the newly changed current range, with the

compliance being set at a value not exceeding the user-specified value and at an upper limit value in the newly changed current range; and

if the current range is found optimum, having the current measurement device outputting the resulting current measurement value, then raising the current range and making a corresponding change in the compliance.

2. A method according to claim 1, wherein if the current range is found optimum, the compliance is changed to either the user-specified value or the upper limit value of the raised current range, whichever is lower.

3. A method according to claim 1, further comprising, after the step of performing another measurement, if the current range is found not to be optimum, raising the current range and changing the compliance accordingly.

4. A method according to claim 1, whereby the lower limit of the current range is set beforehand, with respect to the minimum output current value from the voltage source.

5. A method according to claim 1, wherein the step of determining whether or not the current range is optimum comprises the steps of:

calculating the ratio between the measured value of current output from the voltage source and the current range; and

determining whether or not the current range needs to be changed by comparing the calculated ratio with a prescribed ratio.

6. A method according to claim 5, the step of determining whether or not the current range needs to be changed by comparing the calculated ratio with a prescribed ratio includes the calculation of the ratio between the measured value of current output from the voltage source and a current range that is lower than the presently set current range, and comparing this calculated ratio with a prescribed ratio.

7. A method according to claim 6, wherein the step of determining whether or not the current range needs to be changed sets the upper limit value of the maintained or changed current range as the true compliance.

8. A method according to claim 2, further comprising, after the step of performing another measurement, if the current range is found not to be optimum, raising the current range and changing the compliance accordingly.

9. A method according to claim 8, whereby the

lower limit of the current range is set beforehand, with respect to the minimum output current value from the voltage source.

10. A method according to claim 9, wherein the step of determining whether or not the current range is optimum comprises the steps of:

calculating the ratio between the measured value of current output from the voltage source and the current range; and

determining whether or not the current range needs to be changed by comparing the calculated ratio with a prescribed ratio.

11. A method according to claim 10, the step of determining whether or not the current range needs to be changed by comparing the calculated ratio with a prescribed ratio includes the calculation of the ratio between the measured value of current output from the voltage source and a current range that is lower than the presently set current range, and comparing this calculated ratio with a prescribed ratio.

12. A method according to claim 11, wherein the step of determining whether or not the current range needs to be changed sets the upper limit value of the maintained or changed current range as the true compliance.